

REMARKS

Non-elected claims 14-20 have been canceled with prejudice to Applicant's right to file an appropriate continuing application directed thereto.

Claim 3 has been amended as suggested by the Examiner and it is therefore respectfully submitted that the rejection under 35 USC 112 can be withdrawn.

Claims 1 and 10 have been combined above. Accordingly, the sole prior art rejection is under 35 USC 103 over Nishiyama in view of Barrett and DE '060, and possibly Nakamura. This rejection is respectfully traversed.

Barium titanate can be made by mixing a barium carbonate powder and titanium dioxide powder and calcining the combination. It has been found, however, that even if the barium carbonate powder is refined and homogeneously dispersed with the titanium dioxide powder, the barium carbonate grains easily grow during the calcining step and interfere with the desired titanate forming process. The effects of such growth are shown in the working examples of this application.

The present invention is based on the discovery that if the barium titanate powder already has an organic polymer absorbed thereon and a specific surface area of at least 10 m²/g when it is combined with the titanium dioxide powder, a superior process is achieved and a desired barium titanate product is realized.

Nishiyama teaches mixing barium carbonate powder, titanium dioxide powder and an organic material but not using a barium carbonate powder which already has an organic polymer absorbed thereon. Mixing barium carbonate, titanium dioxide and an organic material is not the same as the process claimed and does not result in the product of the instant invention. Nakamura has been cited only for

teachings about anionic dispersants and therefore, is not pertinent to the deficiency in the primary reference.

Barrett, which issued in 1971, relates to making carbon compositions suitable for bulk handling, storage and shipment. The reference describes the preparation of barium carbonate and the use of dispersants to deflocculate aggregates and form stable dispersions. While this reference does show a barium carbonate powder made with a dispersant, it does not teach mixing the resulting powder with titanium dioxide powder to form barium titanate. In the previous response, the applicants questioned the motivation to select the barium carbonate of this reference rather than any other barium carbonate and employ it in the present invention or in combination with any of the other references. The Examiner has now stated that the motivation is that the reference indicates that the carbonate would be "of ready dispersability and high reactivity for use in the ceramic industries". Applicants respectfully disagree. As to "use in the ceramic industries", Barrett tells those skilled in the art that this refers to "the solid product obtained in accordance with the present invention [i.e., the BaCO_3] can be metered directly to ceramic slips to react with sulfates contained therein without the addition of further liquids to the system." (Column 7, lines 37 to 41). Such a disclosure does not teach or suggest use in the production of barium titanate. Additionally, the other references do not suggest there is a need for "ready dispersability and high reactivity" and therefore, reliance on such features can only be an after-the-fact attempt at justification for the proposed combination. That is a hallmark of the application of impermissible hindsight.

Beyond the foregoing, Barrett teaches that the spherical barium carbonate having such "ready dispersability and high reactivity" has a particle size of up to 2 microns (column 3, line 50 to column 4, line 7). Clearly, the specific surface area is less than the $10\text{m}^2/\text{g}$ specified in the present claims.

The additional reliance on the German reference for its teaching of a large particle size (at least 32 m³/g) does not remedy the deficiencies in the rejection. The reason is that Barrett discloses that a small particle size is needed to realize the "ready dispersability and high reactivity". Accordingly, if "ready dispersability and high reactivity" was needed, one would not consider the German reference. Conversely, if the large particle size was needed, one would not consider Barrett. There is no justification for combining these two references.

It is respectfully submitted that the prior art rejections should also be withdrawn.

The provisional rejection of claims on the grounds of obviousness type double patenting rejection over claim 1 of co-pending application 10/173,665 in view of JP '062 and Nakamura is moot. The fact that the co-pending application has been abandoned has now been recorded on public PAIR.

In view of all of the foregoing amendments and remarks, it is respectfully submitted that this application is now in condition to be allowed and the early issuance of a Notice of Allowance is respectfully requested.

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Respectfully submitted,

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